

CLAIMS:

1. A device (1) arranged for carrying-out a bioelectrical interaction with an individual, said device comprising:
 - sensing means (6) comprising a plurality of electrodes (8,9) arranged to measure a first electrical signal (S) when brought into contact with an individual's skin;
 - testing means (18) arranged to deliver a second electrical signal (T) to a corresponding input of said electrodes (8,9), said electrodes being further arranged to generate a response signal (S') upon receipt of the second electrical signal;
 - control unit (5) arranged to analyze the first electrical signal and to actuate the testing means (18) upon an occurrence of a predetermined event (15) in the first electrical signal;
 - ~~1~~ - lead-off detection means (14a) arranged to verify an integrity of the contact of said electrodes by analyzing the response signal (S') and detecting a parameter related to said integrity.
- 15 2. A device according to Claim 1, wherein the test means (24) comprises a signal generator (24a) arranged to generate the second electrical signal in substantially the same bandwidth as the first electrical signal.
- 20 3. A device according to Claim 2, wherein the test means (24) further comprises a sequencer (24b) arranged to deliver a sequence of variable second electrical signals to each input of said electrodes (29,29a) in order to determine the integrity of the contact of each electrode within said plurality of electrodes.
- 25 4. A device according to any one of the preceding Claims, wherein the device further comprises lead-off indication means (16), said lead-off indication means being actuatable by the lead-off detection means (14a) upon a detection of said parameter.
5. A device according to any one of the preceding Claims, wherein said bioelectrical interaction comprises monitoring of a physiological condition of the individual.

6. A device according to any one of the preceding Claims, wherein said bioelectrical interaction comprises electro-stimulation of a body part of the individual.

5 7. A method for on-demand verification of the integrity of an electrical contact of an electrode to a body part of an individual, wherein said electrode is part of a device arranged to carry-out a bio-electrical interaction with the individual, said method comprising the following steps:

- measuring a first electrical signal by means of the electrode;
- 10 - analyzing the first electrical signal for occurrence of a predetermined event;
- generating a second electrical signal upon detection of the predetermined event;
- generating a response signal by applying the second electrical signal to an input of the electrode;
- 15 - analyzing the response signal for detecting a parameter related to said integrity.

8. A method according to Claim 7, wherein the second electrical signal is generated in substantially the same bandwidth as the first electrical signal.

20 9. A method according to Claim 8, further comprising the steps of: applying a sequence of variable second electrical signals to each input of said electrodes; processing the resulting sequence of response signals in order to determine the integrity of the contact of each electrode within said plurality of electrodes.